Sealant Usage in Conjunction with Fire Rated Dampers

Refer to:
'Installation Instructions for FD, DFD, SSFD, & KFD Models' (Part #452763)
or
'Installation Instructions for FSD-XXX, DFD-XXX, & CFSD-XXX Series Fire & Combination Fire Smoke Dampers' (Part #461336)
or
'Installation Instructions for FD & DFD 150X Series Curtain Fire Dampers' (Part #453946) for additional details.

The field or factory installation of a sleeve on a fire rated damper does not require any application of sealant to maintain the UL 555 classification of the fire damper assembly. However, sealant can be used along any seams of a fire rated damper assembly (except along blade edges) to help prevent air leakage in high pressure applications.

The general installation of fire rated dampers is addressed in UL555 (*Standard for Fire Dampers*, Sixth Edition, June 1, 1999) in Section 18, "Installation and Operating Instructions." In reference to the use of a sealant in the area between the inside of a wall opening and the outside of the fire damper sleeve (referred to as the "annular space," see figure 1), UL 555 provides the following information:

18 General

18.1 A copy of the installation and operating instructions shall be used as a reference in the examination and testing of the damper. For these purposes, a final printed copy is not required.

18.2 Each shipping container that contains a damper(s) shall be provided with legible instructions pertaining to the installation and operation of the damper. Illustrations are used with the required instructions toclarify the intent. Dampers shipped in a common container are required to be provided with one copy of the installation and operating instructions only.

18.3 The instructions shall specify:
a) The type of wall or partition (masonry or gypboard) or floor, as applicable;
b) The clearances required for expansion of the fire damper, as applicable;

The list continues, but point 18.3b states that the clearance requirement for fire damper expansion is to be called out in the manufacturer's installation instructions. Greenheck's installation instructions for fire rated dampers (part #452763, #453946, or #461336) provide the following specific clearance requirements:

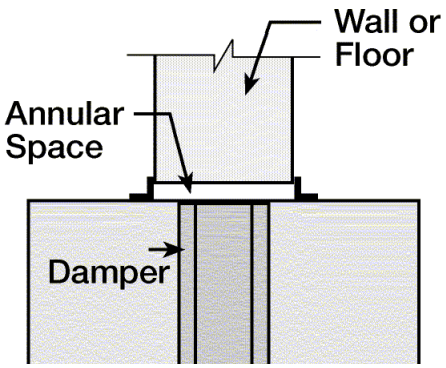

Figure 1

Clearances Required Between Fire Damper Sleeves and Wall / Floor Openings

Fire dampers and sleeve assemblies expand during periods of intense heat; it is essential that openings in walls or floors be larger than the fire damper and sleeve assembly to allow for this expansion. Clearances required between the outside of fire damper sleeve assemblies and wall/floor openings are:

- Galvanized steel fire dampers and sleeves: 1/8 inch (3mm) per foot of damper width and height with a minimum clearance ¼ inch (6mm) and a maximum of 1½ (38mm) inches
- Stainless steel fire dampers and stainless steel or galvanized sleeves: 3/16 inch (4.7mm) per foot of damper width and height with a minimum clearance 1/4 inch (6mm) and a maximum of 2 inches (51mm).

These are total clearances (ignoring fastener heads) and do not need to be equally spaced around the damper.

In the event of a fire, the annular space allows for fire damper expansion so that the damper will not bind and fail to function properly. Sealant, or any other foreign substance, that is introduced into the annular space must allow for compliance so that the damper can still expand. If the sealant used will not allow for proper expansion, the clearance requirements will not be met.

In conclusion, if a foreign material is to be introduced into the clearance area, the Local Authority Having Jurisdiction (AHJ) should decide if the application will meet necessary expansion requirements.

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